# Montana Fish, Wildlife & Parks

# SPECIFICATIONS FOR WORK SPECIAL PROVISIONS

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#### 1. PROJECT DESCRIPTION

The Project involves construction work associated with:

Glasgow Base Ponds (FAS) Road Rehabilitation Fish, Wildlife & Parks (FWP) project # 7133731 Located in Valley County, MT

The project generally includes grading the existing roadway, adding 3" of  $\frac{3}{4}$ "- over the entire roadway and redefining the roadway ditches. There is an additive alternate to build up one section of roadway with 6" of 3"- pit run

# 2. PROJECT RELATED CONTACTS

Project contacts are designated as follows:

Owner: Montana FWP

1420 E. Sixth Ave. PO Box 200701

Helena, MT 59620-0701

**FWP Project Representative:** Kenneth Phillips, P.E.

FWP Project Manager

1522 9<sup>th</sup> Avenue Helena, MT 59620 406-841-4006 (wk) 406-431-4031 (cell) 406-841-4004 (fax)

#### 3. SITE INSPECTION

All Bidders should satisfy themselves as to the construction conditions by personal examination of the site described in this document. Bidders are encouraged to make any investigations necessary to assess the nature of the construction and the difficulties to be encountered, see General Conditions, Article 3.

#### 4. SOILS INFORMATION

Geotechnical investigation work has not been done for this Project. It is the responsibility of the Bidders to conduct all investigations and determine the soil type and digging conditions that may be encountered with this Project prior to bid preparation, see General Conditions, Article 3.

# 5. PROJECT REPRESENTATIVE, INSPECTIONS, AND TESTING

The Contractor's work will be periodically tested and observed to insure compliance with the Contract Documents. Complete payment will not be made until the Contractor has

demonstrated that the work is complete and has been performed as required. If the Project Representative detects a discrepancy between the work and the requirements of the Contract Documents at any time, up to and including final inspection, such work will not be completely paid for until the Contractor has corrected the deficiency, see General Conditions, Article 9.

The Project Representative will periodically monitor the construction of work to determine if the work is being performed in accordance with the contract requirements. The Project Representative does not have the authority or means to control the Contractor's methods of construction. It is, therefore, the Contractor's responsibility to utilize all methods, equipment, personnel, and other means necessary to assure that the work is installed in compliance with the Drawings and Specifications, and laws and regulations applicable to the work. Any discrepancies noted shall be brought to the Contractor's attention, who shall immediately correct the discrepancy. Failure of the Project Representative to detect a discrepancy will not relieve the Contractor of his ultimate responsibility to perform the work as required, see General Conditions, Article 3.

The Contractor shall inspect the work as it is being performed. Any deviation from the Contract requirements shall be immediately corrected. Prior to any scheduled observation by the Project Representative, the Contractor shall again inspect the work and certify to the Project Representative that he has inspected the work and it meets the requirements of the Contract Documents. The Project Representative may require uncovering of work to verify the work was installed according to the contract documents, see General Conditions, Article 12.

The work will be subject to review by the Project Representative. The results of all such observations, and all contract administration, shall be directed to the Contractor only through the Project Representative.

- 5.1 <u>Services Required by the Contractor</u>. The Contractor shall provide the following services:
  - a. Any field surveys to establish locations, elevations, and alignments as stipulated on the Contract Documents. FWP reserves the right to set preliminary construction staking for the project. The Contractor is responsible to notify FWP for any construction staking discrepancies.
  - b. Preparation and certification of all required shop drawings and submittals as described in the General Conditions, Article 3.
  - c. All testing requiring the services of a laboratory to determine compliance with the Contract Documents shall be performed by an independent commercial testing laboratory acceptable to the Project Representative. The laboratory shall be staffed with experienced technicians properly equipped, and fully qualified to perform the tests in accordance with the specified standards.
  - d. Preparation and submittal of a construction schedule, including submittals, see

General Conditions, Article 3. The schedule shall be updated as required, as defined in the Contract Documents.

- e. All Quality Control testing as required by the Contractor's internal policies.
- f. All Quality Assurance testing and/or re-testing as stated in the Contract Documents, see General Conditions, Article 13.
- 5.2 <u>Services Provided by the Owner</u>. The Owner shall provide the following services at no cost to the Contractor except as required for retests as defined in the Contract Documents.
  - a. The Project Representative may check compaction of backfill and surfacing courses using laboratory testing submittal information supplied by the Contractor. These tests are to determine if compaction requirements are being fulfilled in accordance with the Contract Documents. It is ultimately the responsibility of the Contractor to insure that this level of compaction is constant and met in all locations.
  - b. Any additional Quality Assurance testing deemed appropriate by the Owner, at the Owner's expense.

# 6. ENGINEERING INTERPRETATIONS

Timely Engineering decisions on construction activities or results have an important bearing on the Contractor's schedule. When engineering interpretation affects a plan design or specifications change, it should be realized that more than 24 hours may be required to gain the necessary Owner participation in the decision process including time for formal work directive, or change order preparation as required.

# 7. REJECTED WORK

Any defective work or nonconforming materials or equipment that may be discovered at any time prior to the expiration of the warranty period, shall be removed and replaced with work or materials conforming to the provisions of the Contract Documents, see General Conditions, Article 12. Failure on the part of the Project Representative to condemn or reject bad or inferior work, or to note nonconforming materials or equipment on the Contractors submittals, shall not be construed to imply acceptance of such work. The Owner shall reserve and retain all its rights and remedies at law against the Contractor and its Surety for correction of any and all latent defects discovered after the guarantee period (MCA 27-2-208).

Only the Project Representative will have the authority to reject work which does not conform to the Contract Documents.

# 8. UTILITIES

The exact locations of existing utilities that may conflict with the work are not precisely known. It shall be the Contractor's responsibility to contact the owners of the respective utilities and arrange for field location services. **One Call Locators, 1-800-424-5555** 

The Contract Documents may show utility locations based on limited field observation and information provided to the Project Representative by others. The Project Representative cannot guarantee their accuracy. The Contractor shall immediately notify the Project Representative of any discrepancies with utility locations as shown on the Contract Drawings and/or their bury depths that may in any way affect the intent of construction as scoped in these specifications.

There will be no separate payment for exploratory excavation required to locate underground utilities.

- 8.1 <u>Notification</u>. The Contractor shall contact, in writing, all public and private utility companies that may have utilities encountered during excavation. The notification includes the following information:
  - a. The nature of the work that the Contractor will be performing.
  - b. The time, date and location that the Contractor will be performing work that may conflict with the utility.
  - c. The nature of work that the utility will be required to perform such as moving a power pole, supporting a pole or underground cable, etc.
  - d. Requests for field location and identification of utilities.

A copy of the letter of notification shall be provided to the Project Representative. During the course of construction, the Contractor shall keep the utility companies notified of any change in schedule, or nature of work that differs from the original notification.

8.2 <u>Identification</u>. All utilities that may conflict with the work shall be the Contractor's responsibility to locate before any excavation is performed. Field markings provided by the utility companies shall be preserved by the Contractor until actual excavation commences. All utility locations on the Drawings should be considered approximate and should be verified in the field by the Contractor. The Contractor shall also be responsible for locating all utilities that are not located on the Drawings.

Utilities are depicted on the Contract Documents in accordance with their achieved "Quality Levels," as defined in the American Society of Civil Engineer's Document, ASCE 38, "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data." Reliance upon these data for risk management purposes during bidding does not relieve the Contractor, or Utility Owner from following all applicable utility damage prevention statutes, policies, and/or procedures during construction. It is important that the Contractor investigates and understands the scope of work between the

project Owner and Engineer regarding scope of limits of the utility investigations leading to these utility depictions. Definitions of Quality Levels are described as follows:

- a. "QUALITY LEVEL A" (QLA): LOCATING THROUGH EXCAVATION. QLA data are highly accurate and are obtained by surveying an exposed utility. As such, both horizontal and vertical data are recorded. Survey accuracies are typically set at 15mm (1/2-inch) vertically, and to project survey standards horizontally (typically the same as for topography features), although these survey accuracies and precisions are generally left to the owner to specify in a scope of work. In addition to the applicable standard of care and any other additional standards imposed by commercial indemnity clauses, the accuracy of these location data is also typically guaranteed. Other data typically characterized include material type, surface elevation, utility size/capacity, outside dimensions, and configurations, soil type, and utility condition.
- b. "QUALITY LEVEL B" (QLB): DESIGNATING. QLB information is obtained through the application of appropriate surface geophysical methods to identify the existence and approximate horizontal location of utilities (a utility's "designation") within the project limits, followed by survey, mapping, and professional review of that designation. Underground utilities are identified by interpretation of received signals generated either actively or passively, and through correlating these received signals with visible objects (QLC) and record data (QLD) to determine function. Designated utilities that can't be identified are labeled as "unknowns." Although approximate has no accuracy associated with it, generally the locations are within inches rather than feet. The more utility congested the area or the deeper the utilities, the less likely it is that the designations will achieve that accuracy. These designations are then surveyed to project accuracies and precisions, typically third-order accuracy similar to other topography features. Note that surveying existing one-call marks does not lead to QLB data, since the genesis of the marks was not under the direct responsible charge of the professional certifying the QLB depictions, and one-call generally does not address unknown utilities, privately owned utilities, utilities without records, abandoned utilities, and so on. Nor does the professional have knowledge of the field technician's qualifications, training, and level of effort.
- c. "QUALITY LEVEL C" (QLC): SURFACE VISIBLE FEATURE SURVEY. QLC builds upon the QLD information by adding an independent detailed topography site survey for surface-visible appurtenances of subsurface utilities including but not limited to fire hydrants, valves, risers, and manholes. Professional judgment is used to correlate the QLD data to the surveyed features, thus

increasing the reliability of both utility location and existence. It is a function of the professional to determine when records and features do not agree and resolve discrepancies. This may be accomplished by depiction of a utility line at quality level D, effectively bypassing or disregarding (but still depicting) a surveyed structure of unknown origin. Additional resolution may result from consultation with utility owners.

- d. "QUALITY LEVEL D" (QLD): EXISTING RECORDS RESEARCH. QLD is the most basic level of information. Information is obtained from the review and documentation of existing utility records, verbal accounts, and/or one-call markings (to determine the existence of major active utilities and their approximate locations).
- 8.3 Removal or Relocation of Utilities. All electric power, street lighting, gas, telephone, and television utilities that require relocation will be the responsibility of the utility owner. A request for extending the specified contract time will be considered if utility owners cause delays.
- 8.4 <u>Public Utilities</u>. Water, sewer, storm drainage, and other utilities owned and operated by the public entities shall, unless otherwise specifically requested by the utility owner, be removed, relocated, supported or adjusted as required by the Contractor at the Contractor's expense. All such work shall be in accordance with these Contract Documents, or the Owner's Standard Specifications or written instructions when the work involved is not covered by these Specifications.
- 8.5 Other Utilities. Utilities owned and operated by private individuals, railroads, school districts, associations, or other entities not covered in these Special Provisions shall, unless otherwise specifically requested by the utility owner, be removed, relocated, supported or adjusted as required by the Contractor at the Contractor's expense. All work shall be in accordance with the utility owner's directions, or by methods recognized as being the standard of the industry when directions are not given by the owner of the utility.
- 8.6 <u>Damage to Utilities and Private Property</u>. The Contractor shall protect all utilities and private property and shall be solely responsible for any damage resulting from his construction activities. The Contractor shall hold the Owner and Project Representative harmless from all actions resulting from his failure to properly protect utilities and private property. All damage to utilities shall be repaired at the Contractor's expense to the full satisfaction of the owner of the damaged utility or property. The Contractor shall provide the Owner with a letter from the owner of the damaged utility or property stating that it has been repaired to the utility owner's full satisfaction.
- 8.7 <u>Structures</u>. The Contractor shall exercise every precaution to prevent

- damage to existing buildings or structures in the vicinity of his work. In the event of such damages, he shall repair them to the satisfaction of the owner of the damaged structure at no cost to the Owner.
- 8.8 Overhead Utilities. The Contractor shall use extreme caution to avoid a conflict, contact, or damage to overhead utilities, such as power lines, streetlights, telephone lines, television lines, poles, or other appurtenances during the course of construction of this project.
- 8.9 <u>Buried Gas Lines</u>. The Contractor shall provide some means of overhead support for buried gas lines exposed during trenching to prevent rupture in case of trench caving.
- 8.10 Pavement Removal. Where trench excavation or structure excavation requires the removal of curb and gutter, concrete sidewalks, or asphalt or concrete pavement, the pavement or concrete shall be cut in a straight line parallel to the edge of the excavation by use of a spade-bitted air hammer, concrete saw, colter wheel, or similar approved equipment to obtain a straight, square clean break. Pavement cuts shall be 2 feet wider than the actual trench opening.
- 8.11 Survey Markers and Monuments. The Contractor shall use every care and precaution to protect and not disturb any survey marker or monuments, such as those that might be located at lot or block corners, property pins, intersection of street monuments or addition line demarcation. Such protection includes markings with flagged high lath and close supervision. No monuments shall be disturbed without prior approval of the Project Representative. Any survey marker or monument disturbed by the Contractor during the construction of the project shall be replaced at no cost to the Owner by a licensed land surveyor.
- 8.12 <u>Temporary Utilities</u>. The Contractor shall provide all temporary electrical, lighting, telephone, heating, cooling, ventilating, water, sanitary, fire protection, and other utilities and services necessary for the performance of the work. All fees, charges, and other costs associated therewith shall be paid for by the Contractor.

# 9. CONSTRUCTION SAFETY

The Contractor shall be solely and completely responsible for conditions of the jobsite, including safety of all persons (including employees and subcontractors) and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to U.S. Department of Labor (OSHA), and all other applicable federal, state, county, and local laws, ordinances,

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codes, and regulations. Where any of these are in conflict, the more stringent requirement shall be followed. The Contractor's failure to thoroughly familiarize himself with the aforementioned safety provisions shall not relieve them from compliance with the obligations and penalties set forth therein, see General Conditions, Article 10.

# 10. CONSTRUCTION LIMITS AND AREAS OF DISTURBANCE

- 10.1 Construction Limits. Where construction easements or property lines, are not specifically called out on the Contract Documents, limit the construction disturbance to ten (10) feet, when measured from the edge of the slope stake grading, or to the adjacent property line, whichever is less. Disturbance and equipment access beyond this limit is not allowed without the written approval of <a href="botto">both</a> the Project Representative <a href="mailto:and">and</a> the Owner of the affected property. If so approved, disturbance beyond construction limits shall meet all requirements imposed by the landowner; this includes existing roads used and/or improved as well as the construction of new access roads. Special construction, reclamation, or post-construction reclamation or other closure provisions required by the landowner on access roads beyond the construction limits shall be performed by the Contractor at no additional cost to the Owner.
- Areas of Disturbances. Approved areas of disturbance are those areas disturbed by construction activities within the construction limits and along designated or approved access routes. Such areas may require reclamation and revegetation operations, including grading to the original contours, top soiling with salvaged or imported topsoil, seeding, fertilizing, and mulching as specified herein. Other areas that are disturbed by the Contractor's activities outside of the limits noted above will be considered as site damage or unapproved areas of disturbance, see General Conditions, Articles 3 and 10. This includes areas selected by the Contractor outside the defined construction limits for mobilization, offices, equipment, or material storage.

# 11. DECONTAMINATE CONSTRUCTION EQUIPMENT

Power wash all construction equipment entering the project site to prevent the spread of noxious weeds and aquatic invasive species. This applies to all FWP projects, whether or not individual construction permits specifically address cleaning of equipment.

# 12. TREE PROTECTION AND PRESERVATION

The Contractor and the Owner shall individually inspect all trees within the project construction limits prior to construction. The Owner shall determine which trees are to be removed and which trees are to be preserved. Construction of the grading, utilities and various roadway facilities must not significantly damage the trees root system or hinder it's chances for survival. Reasonable variations from the Contract Documents, as directed by the Project Representative, may be employed to ensure the survival of trees.

# 13. CONSTRUCTION SURVEYS

The Contractor will be responsible for all layout and construction staking utilizing the Project Representative's existing control and coordinate data for the project. Dimensions and elevations indicated in layout of work shall be verified by the Contractor. Discrepancies between Drawings, Specifications, and existing conditions shall be referred to the Project Representative for adjustment before work is performed. The Project Representative may set location and grade stakes prior to construction; however, it is ultimately the responsibility of the Contractor to check and verify all construction staking for the project.

Existing survey control (horizontal and vertical) has been set for use in the design and ultimately the construction of these improvements. A listing of the coordinates and vertical elevation for each of these control points may be included in the project drawings.

The Contractor will be responsible for preserving and protecting the survey control until proper referencing by the Contractor has been completed. Any survey control obliterated, removed, or otherwise lost during construction will be replaced at the Contractor's expense.

Contractor shall be aware of property pins and survey monuments. Damage to these pins will require replacement of such by a registered land surveyor at no cost to the owner.

The Contractor shall provide construction staking from the Contractor's layouts and the control points. Contractor's construction staking includes at a minimum:

- 1. Slope stakes located at critical points as determined by the Project Representative.
- 2. Blue tops every longitudinally and transversely for subgrade and crushed base to verify finish grading of course.
- 3. Location and grade stakes for drainage features and retaining walls.
- 4. Location stakes for roadside safety items, permanent and temporary traffic control, and misc. items as determined by the Project Representative.

Original field notes, computations and other records take by the Contractor for the purpose of quantity and progress surveys shall be furnished promptly to the Project Representative and shall be used to the extent necessary in determining the proper amount of payment due to the Contractor.

# 14. MATERIAL SOURCES AND CONSTRUCTION WATER

Special Provisions Page 10 The Contractor shall be responsible for locating all necessary material sources, including aggregates, earthen borrow and water necessary to complete the work. The Contractor shall be responsible for meeting all transportation and environmental regulations as well as paying any royalties. The Contractor shall provide the Project Representative with written approvals of landowners from whom materials are to be obtained, prior to approval.

The Contractor may use materials from any source, providing the materials have been tested through representative samples and will meet the Specifications.

Water for compaction efforts shall be supplied by the Contractor.

# 15. MATERIALS SALVAGE AND DISPOSAL

Notify the Owner for any material salvaged from the project site not identified in the Contract Documents. The Owner reserves the right to maintain salvaged material at the project site, compensate the Contractor for relocation of salvaged material, or agreed compensation to Owner for material salvaged by the Contractor.

Haul and waste all waste material to a legal site and obey all state, county, and local disposal restrictions and regulations.

# 16. STORED MATERIALS

Contractor shall use an approved storage area for materials. Materials and/or equipment purchased by the Contractor may be compensated on a monthly basis. For compensation, provide the Project Representative invoices for said materials, shop drawings and/or submittals for approval, and applicable insurance coverage, see General Conditions, Article 9.

# 17. STAGING AND STOCKPILING AREA

Contractor shall use staging and stockpiling sites for to facilitate the project as approved by the Owner. Contract Documents may show approved staging and stockpiling locations. Notify Owner within 24 hours for approval of staging and stockpiling sites not shown on the Contract Drawings.

# 18. SECURITY

The Contractor shall provide all security measures necessary to assure the protection of equipment, materials in storage, completed work, and the project in general.

#### 19. CLEANUP

Cleanup for each item of work shall be fully completed and accepted before the item is

Special Provisions Page 11 considered final. If the Contractor fails to perform cleanup within a timely manner the Owner reserves the right to withhold final payment.

Review these Contract Documents for additional Final Cleanup specifications for specific measures, associated with Contractor responsibilities and final payment.

# 20. ACCESS DURING CONSTRUCTION

Provide emergency access at all times within the project throughout the construction period. After the contract is awarded the Owner and the Contractor will agree on a window of time that the site will be shut down so that the contractor can proceed with the work. This shutdown will require public notice and Fish & Wildlife Commission approval so the time period of shut down will have to be strictly adhered to.

# 21. CONSTRUCTION TRAFFIC CONTROL

The Contractor is responsible for providing safe construction and work zones within the project limits by implementing the rules, regulations, and practices of the <u>Manual on Uniform Traffic Control Devices</u>, current edition.

# 22. SANITARY FACILITIES

Provide on-site toilet facilities for employees of Contractor and Sub-Contractors and maintain in a sanitary condition.

# 23. CONTRACT CLOSEOUT

The Contractor's Superintendent shall maintain at the project site, a "Record Set of Drawings" showing field changes, as-built elevations, unusual conditions encountered during construction, and such other data as required to provide the Owner with an accurate "as constructed" set of record drawings. The Contractor shall furnish the "Record Set" to the Project Representative following the Final Inspection of the Project.

The Contractor's final payment will not be processed until the "Record Set" of drawings are received and approved by the Project Representative.

#### 24. MEASUREMENT AND PAYMENT

Review these Contract Documents for additional Measurement and Payment specifications for definitions. Quantities are listed on the Bid Proposal for Payment Items. Additional material quantities, volumes, and measurements may be shown on the Contract Document drawings and/or specifications.

Unit Price quantities and measurements shown on the Bid Proposal are for bidding and contract purpose only. Quantities and measurements supplied, completed for the project, and verified by the Project Representative shall determine payment. Each unit

price will be deemed to include an amount considered by the Contractor to be adequate to cover Contractor's overhead and profit for each bid item.

The Owner or Contractor may make a Claim for an adjustment in Contract Unit Price if the quantity of any item of Unit Price Work performed by the Contractor <u>differs</u> <u>materially and/or significantly (increase or decrease by 50%)</u> from the estimated quantity indicated on the Bid Proposal.

Lump sum bid item quantities will not be measured. Payment for these lump sum bid proposal items will be paid in full amount listed on the Bid Proposal when accepted by the Project Representative, unless specified otherwise.

# TECHNICAL SPECIFICATIONS

# INDEX TO

# TECHNICAL SPECIFICATIONS

# Glasgow Base Ponds FAS Road Rehabilitation FWP# 7133731

Section 01019 - Contract Considerations

Section 01025 - Measurement and Payment

Section 01039 - Coordination and Meetings

Section 01400 - Quality Control

Section 01410 – Laboratory Testing

Section 01560 - Temporary Controls

Section 01600 - Material & Equipment

Section 01700 - Contract Closeout

Section 02207- Aggregate Materials

Section 02231 - Aggregate Courses

#### SECTION 01019 - CONTRACT CONSIDERATIONS

#### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Application for Payment
- B. Change procedures
- C. Environmental Considerations

#### 1.2 RELATED SECTIONS

- A. Section 01025 Measurement and Payment.
- B. Section 01400 Quality Control

#### 1.4 APPLICATIONS FOR PAYMENT

- A. Submit 1 copy of each application on Department Fish, Wildlife and Parks Form 101.
- B. Content and Format: Utilize Schedule of Values on proposal form for listing items in Application for Payment.
- C. Payment Period: 30 days.

#### 1.5 CHANGE ORDER PROCEDURES

- A. The Engineer will advise of minor changes in the Work not involving an adjustment to Contract Sum/Price or Contract Time as authorized by State of Montana, General Conditions of the Contract.
- A. The Engineer may issue a Change Directive, which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change. Contractor will prepare and submit an estimate within 5 days.
- C. The Contractor may propose changes by submitting a request for change to the Engineer describing the proposed change and its full effect on the Work. Include a statement describing the reason for the change, and the effect on the Contract Sum/Price and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors.
- D. Unit Price Change Order: For pre-determined unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units, which are not pre-determined, execute Work under a Construction Change Directive. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order
  - 1.6 ENVIRONMENTAL CONSIDERATIONS
    All material removed from the site will be disposed of in a safe and legal manner.

END OF SECTION

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# SECTION 01025 - MEASUREMENT AND PAYMENT

#### PART 1 GENERAL

# 1.1 SECTION INCLUDES

- A. Measurement and payment criteria applicable to the Work performed under a unit price payment method.
- B. Defect assessment and non-payment for rejected work.

#### 1.2 AUTHORITY

- A. Measurement methods delineated in the individual specification sections are intended to complement the criteria of this section. In the event of conflict, the requirements of the individual specification section shall govern.
- B. Take all measurements and compute quantities. The Engineer will verify measurements and quantities.

# 1.3 UNIT QUANTITIES SPECIFIED

- A. Lump sum bid item quantities will not be measured. Payment for these lump sum bid items will be per bid form.
- B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit sum/prices contracted if applicable.

# 1.4 MEASUREMENT OF QUANTITIES

- A. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- B. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

#### 1.5 PAYMENT

- A. Payment Includes: For each line item this includes all labor, equipment and materials required to complete the items. Some pay items will be interdependent on other quantities and many of the pay items will have incidental costs not refelected in the actual quantity but those incidental items should be included in the unit price and will not be paid separately.
  - 1. **Mobilization** this includes all general condition requirements such as insurance, bonds as well as equipment and manpower mobilization to the site. It also includes any job trailer rental and other non line item specific materials or equipment. Mobilization

cannot exceed 15% of the total bid and can be billed at 65% after move in and the remaining 35% after the project is completed and all equipment and materials are removed from the site.

- 2. **Grading and Reshaping ditches** includes initial grading prior to placing any material to achieve proper road section as well as finished grading after the material is placed. Reshaping Ditches includes the costs to shape and grade the ditch lines which may or may not be filled in.
- 3. **Furnish & Install ¾"Minus Roadmix** includes all purchasing, loading, hauling, placing, watering and compacting of approved road material.
- 4. **Testing Allowance** is a built in bid item for contractor to acquire the services of an independent testing firm to perform compaction testing on the road section to verify that the material is placed within the requirements of the specifications.
- 5. Additive Alternate No 1, Install 6" of 3" minus pit run gravel includes all purchasing, loading, hauling, placing, watering and compacting of approved material in the designated areas.

# 1.6 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the Engineer it is not practical to remove and replace the Work, the Engineer will direct one of the following remedies:
  - 1. The defective Work will be repaired to the instructions of the Montana Department of Fish, Wildlife and Parks Engineer and the unit sum/price will be adjusted to a new sum/price at the discretion of the Montana Department of Fish, Wildlife and Parks Project Engineer.
  - 2. The defective work will not be repaired. The Project Engineer will adjust the unit sum/price of the work to reflect the degree of defectiveness and subsequent serviceability.
- C. The individual specification sections may modify these options or may identify a specific formula or percentage sum/price reduction.
- D. The authority of the Montana Department of Fish, Wildlife and Park Project Engineer to assess the defect and identify payment adjustment, is final.

# 1.7 NON-PAYMENT FOR REJECTED PRODUCTS

- A. Payment will not be made for any of the following:
  - 1. Products wasted or disposed of in a manner that is not acceptable.
  - 2. Products determined as unacceptable before or after placement.
  - 3. Products not completely unloaded from the transporting vehicle.
  - 4. Products placed beyond the lines and levels of the required Work.

- Products remaining on hand after completion of the Work. Loading, hauling and disposing of rejected Products. 5.
- 6.

# **END SECTION**

#### COORDINATION AND MEETINGS

#### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Coordination.
- B. Alteration project procedures.
- C. Preconstruction conference.

# 1.2 COORDINATION

- A. Coordinate scheduling, submittals, and Work of the various Sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Coordinate completion and clean up of Work of separate Sections in preparation for Substantial Completion.
- C. After Owner occupancy of site, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.
- D. Contractor will coordinate all work activities with the Montana Department of Fish, Wildlife and Parks Engineer Kenneth Phillips. P.E.

# 1.3 PRECONSTRUCTION CONFERENCE

- A. Engineer will schedule a conference after Notice of Award is issued.
- B. Attendance Required: Engineer, Contractor, Sub-Contractors and the Regional Fish, Wildlife and Parks representative when possible.

# C. Agenda:

- 1. Execution of Owner-Contractor Agreement.
- 2. Submission of executed bonds and insurance certificates.
- 3. Distribution of Contract Documents.
- 4. Submission of list of Subcontractors, list of products, Schedule of Values, and progress schedule.
- 5. Designation of personnel representing the parties in Contract, and the Engineer.
- 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders and Contract closeout procedures.
- 7. Scheduling.

# **END OF SECTION**

Section 01039 - 1 Page

# QUALITY CONTROL

#### PART 1 GENERAL

# 1.1 SECTION INCLUDES

- A. Quality assurance and control of installation.
- B. References

# 1.2 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply fully with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding?
- D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

# 1.3 REFERENCES

- A. Montana Public Works Standard Specifications Current edition.
- B. Should specified reference standards conflict with Contract Documents, or Regulations request clarification for Architect/Engineer before proceeding.
- C. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

END OF SECTION

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#### TESTING LABORATORY SERVICES

#### PART 1 GENERAL

# 1.1 SECTION INCLUDES

- A Selection and payment.
- B Contractor submittals.
- C Laboratory responsibilities.
- D Laboratory reports.
- E Limits on testing laboratory authority.
- E Contractor responsibilities.
- F Schedule of inspections and tests.

# 1.2. REFERENCES

A. ANSI/ASTM D3740 - Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

# 1.3 SELECTION AND PAYMENT

- A. Contractor shall employ and pay for services of an independent testing laboratory to perform specified inspection and testing.
- B. Employment of testing laboratory shall in no way relive Contractor of obligation to perform work in accordance with requirements of Contract Documents.

# 1.4 QUALITY ASSURANCE

- A. Comply with requirements of ANSI/ASTM E329 and ANSI/ASTM D3740.
- B. Laboratory: Authorized to operate in state in which Project is located.
- C. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
- D. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards (NBS) Standards or accepted values of natural physical constants.

#### 1.5 CONTRACTOR SUBMITTALS

- A. Prior to start of Work, submit testing laboratory name, address, and telephone number, and names of full time registered Engineer and responsible officer.
- B. Submit copy of report of laboratory facilities inspection made by Materials Reference Laboratory of National Bureau of Standards (NBS) during most recent tour of inspection, with memorandum of remedies of any deficiencies reported by the inspection.

# 1.6 LABORATORY RESPONSIBILITIES

- A. Perform specified inspection, sampling, and testing of Products in accordance with specified standards.
- B. Ascertain compliance of materials and mixes with requirements of Contract Documents.
- C. Promptly notify Architect/Engineer and Contractor of observed irregularities or non-conformance of Work or Products.

# 1.7 LABORATORY REPORTS

- A. After each inspection and test, promptly submit two copies of laboratory report to Architect/Engineer, and to Contractor.
- B. Include:
  - 1. Date issued,
  - 2. Project title and number,
  - 3. Name of inspector,
  - 4. Date and time of sampling or inspection,
  - 5. Identification of product and Specifications Section,
  - 6. Location in the Project,
  - 7. Type of inspection or test,
  - 8. Date of test,
  - 9. Results of tests,
  - 10. Conformance with Contract Documents.
- C. Provide interpretation of test results to project manager.

#### 1.8 LIMITS ON TESTING LABORATORY AUTHORITY

- A. Laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
- B. Laboratory may not approve or accept any portion of the Work.

- C. Laboratory may not assume any duties of Contractor.
- D. Laboratory has no authority to stop the Work.

# 1.9 CONTRACTOR RESPONSIBILITIES

A. Contract with an appropriate testing agency and make arrangements with the testing agency to perform the tests required in the contract documents.

END OF SECTION

# **TEMPORARY CONTROLS**

# PART 1 GENERAL

- 1.1 SECTION INCLUDES
  - A. Pollution Control
  - B. Traffic Control
- 1.2 RELATED SECTIONS
  - A. Section 01010 Summary of Work
  - B. Section 01039 Coordination and Meetings

# 1.7 POLLUTION CONTROL

A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

# 1.8 TRAFFIC CONTROL

A. Provide all temporary signing, personnel and traffic control devises as required by federal, state and local regulations.

**END OF SECTION** 

# MATERIAL AND EQUIPMENT

#### PART I GENERAL

#### 1.1 SECTION INCLUDES

- A. Products.
- B. Transportation and handling.
- C. Storage and protection.
- D. Substitutions.

# 1.2 PRODUCTS

- A. Products: Means new material, components, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

# 1.3 TRANSPORTATION AND HANDLING

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

# 1.4 STORAGE AND PROTECTION

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.
- B. For exterior storage of fabricated products, place on sloped supports, above ground.
- C. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- D. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

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# 1.5 SUBSTITUTIONS

- A. Engineer will consider requests for Substitutions only within 15 days after date established in Notice to Proceed.
- B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that the Contractor:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
  - 2. Will provide the same warranty for the Substitution as for the specified product.
  - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
  - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

# F. Substitution Submittal Procedure:

- 1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
- 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence.
- 3. The Engineer will notify Contractor, in writing, of decision to accept or reject request.

# END OF SECTION

# CONTRACT CLOSEOUT

#### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Adjusting.
- D. Project record documents.

# 1.2 CLOSEOUT PROCEDURES

- A. Notify the Engineer within 5 days of Work completion that Work is complete in accordance with Contract Documents and ready for Project Manager's final inspection.
- B. Provide submittals to Engineer that are required by governing or other authorities or Owner.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due. Include Certificate of Substantial Completion, Affidavit on Behalf of the Contractor, Consent of Surety Company to Final Payment and As-built drawings and specifications.
- D. Owner will occupy all portions of the site.

# 1.3 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean equipment and fixtures to a sanitary condition.
- C. Clean site, rake clean landscaped areas, leave all disturbed areas relatively smooth with no wheel tracks, ridges or ruts.

# 1.4 PROJECT RECORD DOCUMENTS

- A. Maintain on site, one set of the following record documents; record actual revisions to the Work:
  - 1. Contract Drawings.
  - 2. Specifications.

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- 3. Addenda.
- 4. Change Orders and other Modifications to the Contract.
- 5. Reviewed shop drawings, product data, and samples.
- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
  - 1. Manufacturer's name and product model and number.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda and Modifications.
- E. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - 2. Field changes of dimension and detail.
  - 3. Details not on original Contract drawings.
  - 4. Product substitutions or alternates utilized.
  - 5. Changes made by Addenda and Modifications.
- F. Submit documents to Engineer with claim for final Application for Payment.

# 1.5 WARRANTIES

A. All work shall be warranted free from defect for a period of 1 year from final inspection date.

# END OF SECTION

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#### AGGREGATE MATERIALS

#### PART 1 GENERAL

- 1.1 SECTION INCLUDES
  - A. Aggregate materials.
- 1.2 RELATED SECTIONS
  - A. Section 01410 Testing and Laboratory Services.
- 1.3 REFERENCES
  - A. AASHTO M147 Materials for Aggregate and Soil-Aggregate.
  - B. AASHTO T99 Moisture-Density Relations of Soils
  - C. ANSI/ASTM C136 Method for Sieve Analysis of Fine and Coarse Aggregates.
  - D. ASTM D2922 Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

#### 1.4 SUBMITTALS

- A. Submit laboratory test results for each type of aggregate material 5 days prior to installation.
  - 1. Each aggregate material used as a base or surfacing material shall have as a minimum the following laboratory tests completed:
    - I. Sieve Analysis
    - II. Proctor
    - III. Atterberg Limit Test
- B. Materials Source: Submit name of imported materials suppliers. Provide materials from same source throughout the work. Change of source requires retesting at the Contractor's expense and Engineer approval.
- C. Change of source requires Engineers' approval.

# PART 2 PRODUCTS

2.1 AGGREGATE MATERIALS

A. 3/4 A Crushed Top Surfacing: The material from which a type and grade is to be produced shall have a wear factor not to exceed 50% at 500 revolutions, as determined by Montana Test Method M.T. 209.

# TABLE OF GRADATIONS – 3' MINUS PIT RUN

Percentage by Weights Passing Square Mesh Sieves

3 Inch Sieve	100%
No. 4 Sieve	25-60%
No. 40 Sieve	10-30%
No. 200 Sieve	2-10%

# TABLE OF GRADATIONS - 3/4 INCH CRUSHED TOP SURFACING

Percentage by Weights Passing Square Mesh Sieves

3/4 Inch Sieve	100%
No. 4 Sieve	40-70%
No. 10 Sieve	25-55%
No. 200 Sieve	10-15%

- 1. The aggregate for all grades, including added binder or filler, shall meet the following supplemental requirements:
- a. Dust Ratio. The portion passing the No. 200 sieve shall not be greater than 2/3 of the portion passing the No. 40 sieve.

b.

The liquid limit for that portion of the fine aggregate passing a No. 40 sieve shall not exceed 25 and the plasticity index shall be between three and six, as determined by Montana Test Method M.T. 208.

**END OF SECTION** 

#### AGGREGATE COURSES

# PART 1 GENERAL

#### 1.1 SECTION INCLUDES

A. Aggregate courses.

# 1.2 RELATED SECTIONS

A. Section 01025 - Measurement and Payment: Requirements applicable to lump sum.

# 1.3 REFERENCES

- A. AASHTO T180 Moisture-Density Relations of Soils using a 10lb (4.54 kg) Rammer and an 18 in. (457mm) Drop.
- B. ASTM D2922 Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- C. ASTM D3017 Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.

# PART 2 PRODUCTS

# 2.1 AGGREGATE MATERIALS

- A. 3 inch minus pit run
- B. 3/4 inch Crushed Top Surfacing (CTS): As specified in Section 02207.

# PART 3 EXECUTION

# 3.1 AGGREGATE PLACEMENT

- A. Spread 3/4 inch minus CTS over prepared substrate to a total compacted thickness of 3 inches
- B. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
- C. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

# 3.2 TOLERANCES

- A. Flatness: Maximum variation of 1/10 foot in 10 feet measured along existing slope.
- B. Scheduled Compacted Thickness: Within 1/4 inch of designated thickness.
- C. If tests indicate Work does not meet specified requirements, Project Manager may at his discretion direct the Contractor to rework the material and retest or remove work, replace and retest.

# 3.3 FIELD QUALITY CONTROL

- A. Contractor will be responsible for field quality control.
- B. Compaction testing will be performed in accordance with ASTM D2922
- C. If tests indicate Work does not meet specified requirements, recompact and retest or at Engineer's discretion, remove Work, replace and retest.

**END OF SECTION**